

## ABSTRACT OF THE DISCLOSURE

An end portion of a backfill gap layer is provided on two side portions of a free magnetic layer in a back region, and second antiferromagnetic layers are formed on the two side portions of the free magnetic layer from a face opposing a recording medium to the end portion of the backfill gap layer. Accordingly, in the free magnetic layer in the back region, a bias magnetic field in the magnetic layer is decreased as compared to that in the front region. Hence, a magnetic sensor can be manufactured which can improve the reproduction sensitivity of a central portion of the free magnetic layer to an external magnetic field as compared to that in the past without decreasing the exchange stiffness constant and which can suppress the generation of side reading.